The Journal of Comparative Neurology

FOUNDED BY C.L. HERRICK, 1891
A WISTAR INSTITUTE PRESS JOURNAL PUBLISHED BY ALAN R. LISS, INC.

EDITORIAL BOARD
SANFORD L. PALAY, *Editor-in-Chief*
Harvard Medical School

MILTON W. BRIGHTMAN
National Institutes of Health
VICTORIA CHAN-PALAY
Harvard Medical School
W. MAXWELL COWAN
Salk Institute
FORD F. EBNER
Brown University
THOMAS FINGER
University of Colorado
Medical School
MICHAEL D. GERSHON
Columbia University
ANN M. GRAYBIEL
Massachusetts Institute of Technology
R.W. GUILLERY
University of Chicago
JON H. KAAS
Vanderbilt University

HARVEY J. KARTEN
State University of New York
Stony Brook
STEPHEN T. KITAI
Michigan State University
LAWRENCE KRUGER
University of California
Los Angeles
RAYMOND J. LASEK
Case Western Reserve University
HAJIME MANNEN
Tokyo Medical and Dental University
GEORGE F. MARTIN
Ohio State University
ROBERT Y. MOORE
State University of New York
Stony Brook
ENRICO MUGNAINI
University of Connecticut
WALLE J. H. NAUTA
Massachusetts Institute of Technology

R. GLENN NORTHCUTT
University of Michigan
ALAN PETERS
Boston University
VIRGINIA M. PICKEL
Cornell Medical Center
PASKO RAKIC
Yale University
HENRY J. RALSTON III
University of California
San Francisco
CONSTANTINO SOTELO
Centre Médico-Chirurgical Foch
Paris
JEROME SUTIN
Emory University
GEORGE SZÉKELY
Institute of Anatomy
Debrecen

VOLUME 208
June 10–July 10, 1982

COPYRIGHT © 1982 BY
ALAN R. LISS, INC.
All rights reserved

CONTENTS

VOL. 208 JUNE 10, 1982 No. 1

CONTENTS

JEAN-PIERRE BOURGEOIS AND MADELEINE TOUTANT
Innervation of Avian Latissimus Dorsi Muscles and Axonal Outgrowth Pattern in the Posterior Latissimus Dorsi Motor Nerve During Embryonic Development 1

ANTON REINER, NICHOLAS C. BRECHA, AND HARVEY J. KARTEN
Basal Ganglia Pathways to the Tectum: The Afferent and Efferent Connections of the Lateral Spiriform Nucleus of Pigeon 16

ANTON REINER, HARVEY J. KARTEN, AND NICHOLAS C. BRECHA
Enkephalin-Mediated Basal Ganglia Influences Over the Optic Tectum: Immunohistochemistry of the Tectum and the Lateral Spiriform Nucleus in Pigeon 37

EMIKO SENBA, SADAO SHIOSAKA, YOSHINOBU HARA, SHINOBU INAGAKI, MASAHIRO SAKANAKA, KENICHI TAKATSUKI, YURIKO KAWAI, AND MASAYA TOHYAMA
Ontogeny of the Peptidergic System in the Rat Spinal Cord: Immunohistochemical Analysis 54

G.F. MARTIN, T. CABANA, F.J. DITIRRO, R.H. HO, AND A.O. HUMBERTSON, JR.
Raphespinal Projections in the North American Opossum: Evidence for Connectional Heterogeneity 67

NATHANIEL T. MCMULLEN AND EDMUND M. GLASER
Morphology and Laminar Distribution of Nonpyramidal Neurons in the Auditory Cortex of the Rabbit 85

VOL. 208 JUNE 20, 1982 No. 2

CONTENTS

H.T. CHANG, C.J. WILSON, AND S.T. KITAI
A Golgi Study of Rat Neostriatal Neurons: Light Microscopic Analysis 107

MATSUO MATSUSHITA AND YASUHIKO HOSOYA
Spinocerebellar Projections to Lobules III to V of the Anterior Lobe in the Cat, as Studied by Retrograde Transport of Horseradish Peroxidase 127

INGRID HOLMGREN-TAYLOR
Electron Microscopical Observations on the Indoleamine-Accumulating Neurons and Their Synaptic Connections in the Retina of the Cat 144

ELLENGENE H. PETERSON AND P.S. ULINSKI
Quantitative Studies of Retinal Ganglion Cells in a Turtle, *Pseudemys scripta elegans:* II. Size Spectrum of Ganglion Cells and Its Regional Variation 157

NATHAN K. BLANK AND FREDRICK J. SEIL
Mature Purkinje Cells in Cerebellar Tissue Cultures: An Ultrastructural Study 169

YOSHINOBU HARA, SADAO SHIOSAKA, EMIKO SENBA, MASAHIRO SAKANAKA, SHINOBU INAGAKI, HIROSHI TAKAGI, YURIKO KAWAI, KENICHI TAKATSUKI, TAKASHI MATSUZAKI, AND MASAYA TOHYAMA

Ontogeny of the Neurotensin-Containing Neuron System of the Rat: Immunohistochemical Analysis. I. Forebrain and Diencephalon 177

JØRN CARLSEN, JOSE DE OLMOS, AND LENNART HEIMER
Tracing of Two-Neuron Pathways in the Olfactory System by the Aid of Transneuronal Degeneration: Projections to the Amygdaloid Body and Hippocampal Formation 196

CLARA R. DODGE MILLER, W. KEITH O'STEEN, AND SAM A. DEADWYLER
Effect of Morphine on ^{3}H-Thymidine Incorporation in the Subependyma of the Rat: An Autoradiographic Study 209

VOL. 208 JULY 1, 1982 No. 3

CONTENTS

R. WIESENDANGER AND M. WIESENDANGER
The Corticopontine System in the Rat. I. Mapping of Corticopontine Neurons 215

R. WIESENDANGER AND M. WIESENDANGER
The Corticopontine System in the Rat. II. The Projection Pattern 227

ROBERT W. RHOADES, DAVID C. KUO, JEFFREY D. POLCER, STEPHEN E. FISH, AND THEODORE J. VONEIDA
Indirect Visual Cortical Input to the Deep Layers of the Hamster's Superior Colliculus Via the Basal Ganglia 239

FRANK R. SHARP AND KATHLEEN EVANS
Regional (^{14}C) 2-Deoxyglucose Uptake During Vibrissae Movements Evoked by Rat Motor Cortex Stimulation 255

STEWART A. BLOOMFIELD AND ROBERT F. MILLER
A Physiological and Morphological Study of the Horizontal Cell Types of the Rabbit Retina 288

STEVEN C. CHAMBERLAIN AND GUSTAV A. ENGBRETSON
Neuropeptide Immunoreactivity in *Limulus*. I. Substance P-like Immunoreactivity in the Lateral Eye and Protocerebrum 304

VOL. 208 JULY 10, 1982 No. 4

CONTENTS

L.-G. ELFVIN AND B. LINDH
A Study of the Extrinsic Innervation of the Guinea Pig Pylorus With the Horseradish Peroxidase Tracing Technique 317

JEFFREY L. DENBURG
Identified Motor Neurons in the Cockroach Exhibit Stereotypic Peripheral Branching and Nerve Terminal Structure 325

O.K. LANGLEY, A. REEBER, G. VINCENDON, AND J.P. ZANETTA
Fine Structural Localization of a New Purkinje Cell-Specific Glycoprotein Subunit: Immunoelectron Microscopical Study 335

Pedro Fernández-Llebrez, José Becerra, and Fernando Marín-Girón
Ultrastructure of the Paraphysis Cerebri of the Water Snake *Natrix maura* L. 345

I. Grofova, J.M. Deniau, and S.T. Kitai
Morphology of the Substantia Nigra Pars Reticulata Projection Neurons Intracellularly Labeled With HRP 352

S.M. Highstein, A. Karabelas, R. Baker, and R.A. McCrea
Comparison of the Morphology of Physiologically Identified Abducens Motor and Internuclear Neurons in the Cat: A Light Microscopic Study Employing the Intracellular Injection of Horseradish Peroxidase 369

Dan Goldowitz, Åke Seiger, and Lars Olson
Anatomy of the Isolated Area Dentata Grown in the Rat Anterior Eye Chamber 382

Alexander J. McDonald
Cytoarchitecture of the Central Amygdaloid Nucleus of the Rat 401

Foteos Macrides and Stephen P. Schneider
Laminar Organization of Mitral and Tufted Cells in the Main Olfactory Bulb of the Adult Hamster 419

Index 431